

THE FIRST REPORT OF THE NATIONAL  
COMMISSION ON MARIHUANA (1972):  
SIGNAL OF MISUNDERSTANDING  
OR EXERCISE IN AMBIGUITY

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IN the midst of the drug controversy in the United States at this time stands the first report of the National Commission on Marihuana.<sup>10</sup> The media, prominent politicians, educators, and religious leaders have interpreted this report as conveying the sense that marihuana is harmless. Careful reading of this 184-page summary, which I shall heretofore refer to as the report, clearly indicates that the commission does not recommend the legalization of marihuana but does recommend substantial changes in federal law. Nonprofit private use and distribution of marihuana would be tolerated and public possession of 1 oz. or less of the substance would not be punishable. However, cultivating, selling, or distributing for profit would remain felonies.

These recommendations of the commission have been largely interpreted as the first step toward elimination of all marihuana laws and the establishment throughout the United States of the licensing of sales. For instance, in its analysis of the report the Committee on Public Health of the New York Academy of Medicine recommends:<sup>14</sup> "that an appropriate agency of government investigate the feasibility of a system of government control of the distribution of marihuana." And an editorial of the *New England Journal of Medicine* has stated, "In the long run marihuana legalization appears to hold the greatest promise for effective and intelligent control of marihuana use."<sup>23</sup>

We believe, on the contrary, that the untoward social and medical effects of marihuana reported by the marihuana commission and in the

past and present medical literature do not justify the legalization of cannabis anywhere in the world. We believe that the recommendations of the 1961 Geneva Single Convention<sup>22</sup> outlawing stupefying drugs should not be unilaterally denounced by the United States.

#### USAGE OF MARIHUANA IN THE UNITED STATES

The commission had a large budget (1 million dollars) and a large staff. In order to survey the extent to which marihuana is being used in the United States, 13 members of the commission were aided by a staff of 55 members, which included 16 "youth consultants" and 18 "student researchers." The 38 contributors and contractors listed in the report included 14 lawyers, nine psychologists, seven psychiatrists, and six sociologists—three of whom are known for their strong views favoring the legalization of marihuana. The 46 consultants listed include representatives of the social and behavioral sciences, but the specialties of pharmacology, pathology, and internal medicine were not represented. Two physician pharmacologists were asked to testify for the commission. One of them wrote an article published in the *New York Times Magazine* and a book (1972);<sup>17</sup> both were lenient toward the use of marihuana.

One would have thought that with the selection of Drs. Maurice H. Seevers, Henry Brill, and Dana L. Farnsworth, who have written and studied the marihuana issue extensively, the formation of a balanced commission would have been relatively easy to ensure. Such was not the case.

The commission, in summarizing its findings, published as *Marihuana: A Signal of Misunderstanding. First Report on Marihuana and Drug Abuse*,<sup>10</sup> seems to have selected the data necessary to justify its rather sanguine conclusions about the use of marihuana. In our opinion however, the actual data, contained in the commission's two-volume 1,252-page appendix of technical papers,<sup>10a</sup> should lead to the conclusion that widespread marihuana usage would be most detrimental to the American people.

The commission sponsored a national survey in order to estimate and categorize users of marihuana. The survey defined criteria of usage. The figures derived from the survey indicate that the use of marihuana has reached a large segment of the population. The manner in which the commission has chosen to define its criteria of usage deserves com-

<i>Type of user</i>	<i>Frequency of use</i>	<i>Numbers in total population</i>
Experimental	Once a month or less	24,000,000 people over 11 years of age —14% of all aged 12-17 —15% of adults over 18
Intermittent	2-10 times per month	7,750,000 teenagers and adults
Moderate	11 times per month to once daily	4,500,000 users
Heavy	Several times daily	500,000 users
Very heavy	Almost constantly intoxicated with po- tent preparations— brains rarely free from drug	“Very small fraction” of the 500,000 heavy users

ment. Investigation with radioisotopically labeled delta-9-THC (the psychotoxic agent of cannabis) as early as 1971 showed that this substance and its active metabolites are stored in the tissues,<sup>7</sup> including the brain, for as long as eight days after the substance has been absorbed. This basic fact is not mentioned in the report. To acknowledge this fact would imply, that, by the commission's terms, the “moderate” user (11 times per month to once daily) would never be drug-free. To make a marked distinction, then, between the heavy and very heavy user, as the report continually does, is to confuse the unspecialized reader and elude the pure pharmacological fact of tissue storage of cannabinoids (see accompanying table). The real difference between heavy and very heavy users is that tissue levels are higher in the groups which have the heavier patterns of use. Although the clinical distinction between moderate and very heavy users is worth mentioning, the report's repetitive use of these categories gives the illusion that these divisions are entirely clear and that each group is a distinct entity. The definition of the very heavy user whose brain is “rarely drug-free” applies also to any intermittent user who takes the drug more than twice a week.

Even so, the report is written so as to minimize the dangers to society of this group of heavy users. The phrase in which the commission presents this pivotal group is worth quoting: “All the studies available to the commission have indicated that only a minute number of Ameri-

cans can be designated as very heavy marihuana users" (page 40). This position is qualified by the following statement (page 37):

Practically all of the American research effort to date has focused on the large majority of individuals who use marihuana less often, that is, the experimental and intermittent users. Consequently, not enough is known about the characteristics and behavior of the moderate and heavy users, so it is difficult to distinguish accurately between the two groups. We suspect however that the moderate users share traits with both the intermittent and the heavy users.

The figure for the number of heavy users, 500,000, is never mentioned in print in the report. This figure has to be inferred from the following statement in the report: "2% of the adults and 4% of the youth who have ever used marihuana are heavy users; they use the drug several times daily. A very small fraction of these heavy users may be very heavy users, who are intoxicated most of their waking hours and probably use very potent preparations of the drug" (page 36). Governor Raymond P. Shafer confirmed the figure of 500,000 in an interview that was published in *Hospital Tribune* (March 12, 1973, page 24).

Any physician concerned about legalization of marihuana or increased use of psychotoxic substances in our society would ask himself several important questions, i.e.:

- 1) Is escalation an issue? What is the relation between marihuana and multiple-drug usage?
- 2) What are the psychotoxic effects of chronic heavy use?
- 3) What happens in countries of cannabis consumption?
- 4) Does tolerance to marihuana develop?
- 5) Can alcohol be brought into the discussion as a standard of comparison?
- 6) Are intermittent users, especially educated persons, safe from becoming heavy users?
- 7) Of what value is the distinction between marihuana and hashish?
- 8) Do the recommendations of the marihuana commission violate the clauses of the Single Convention on narcotic drugs?<sup>22</sup>
- 9) How can children and adolescents be discouraged from using marihuana?
- 10) How harmless is marihuana?

## RELATION TO USE OF OPIATES AND MULTIPLE DRUGS

The report is unclear in its attempt to define the relation between marihuana and other drugs. It presents a series of sociological and psychological arguments to justify the idea that these are the basic factors which determine the pattern of usage in any given individual. We see no reason to give predominance to either somatic or social reasons in order to explain why many occasional and intermittent users of marihuana turn into abusers of multiple drugs or of heroin. The main issue is that there is an association, and that this relation exists beyond a doubt. The report mentions that "heroin is most strongly linked to the use of marihuana in black and Spanish-speaking ghettos" (page 48). The survey showed that "marihuana users are about twice as likely to have used any illicit drugs than are those who have ceased using marihuana" (page 45). Further, the report mentions that "4% of current marihuana users have tried heroin" (page 88). The commission is adept at repeating ambiguous warnings which leave the reader bewildered. For instance, "the fact should be emphasized that the overwhelming majority of marihuana users do not progress to other drugs" (page 87). Then, a little later, the report states, "to assume that marihuana use is unrelated to the use of other drugs would be inaccurate. As mentioned earlier, the heavy or very heavy users are frequently users of other drugs. . . . The other drugs which some marihuana smokers use vary according to the social characteristics of the population in question. Within some groups, heroin may be the choice; in other groups it may be LSD" (page 88).

One may ask why the commission omitted reference to the international literature which links marihuana and opiates. The report from Egypt on cannabis, in English,<sup>18</sup> is probably the most comprehensive study linking the use of opium with length of utilization of hashish in a sample of 850 hashish users. This study indicates that 20% of hashish users also consumed opium within 10 years after starting with cannabis; after 25 years, 40% of the chronic hashish users also consumed opium. Even in the United States, enough studies have been performed which describe this relation. Crompton and Brill<sup>3</sup> surveyed college students and reported that 100% of heavy smokers of marihuana used other drugs, in contrast to 84% of weekly smokers and 22% of monthly smokers of marihuana.

## CHRONIC EFFECTS ON CEREBRAL FUNCTION

In trying to judge the chronic effects of marihuana, the commission sponsored a study of 20 smokers of marihuana to whom the drug was made freely available (Boston free-access study). We shall be critical of the results of this study as they are published in the summarized *First Report*.<sup>10</sup> This summary omits much pertinent information to be found in the technical papers published in the two-volume Appendix of the Commission's Report.<sup>10a</sup> Some of this information was presented at the 1972 meeting of the American College of Neuropsychopharmacology.<sup>1</sup>

Here is an excerpt from the report which describes the subjects who participated in the Boston free-access study:

The Boston free-access study permitted the Commission to observe a group of individuals whose life styles, activities, values and attitudes are representative of a segment of the unconventional youthful subculture. The month-long period of controlled study during the fall prevented the participation of individuals who were married, steadily employed or enrolled in school.

Individuals who smoked marihuana once a week or less were sought by the researchers but were exceedingly unusual among the population available for the study. Consequently, the group studied contrasted with the student and full-time working populations in which weekday marihuana use is more uncommon. For this reason, the intermittent users studied appeared to be similar to, rather than different from, the moderate and heavy users studied. Both groups had used marihuana for an average of five years [page 38].

More succinctly, 20 subjects were involved. They were divided into two groups, the casual and the heavy users. The euphemistic character of the above passage is clear when it becomes known that of the 10 "casual" users five admitted to experience with other drugs. Two of them admitted having tried cocaine two or three times, one had used barbiturates two or three times, another had used cocaine once and barbiturates two or three times and, finally, one had snorted heroin—the number of times is not mentioned.

Among the heavy users, the use of cocaine and barbiturates was reported by six. One person had smoked opium twice. Of all the heavy

users the person who admitted the greatest use of drugs admitted using cocaine and barbituates and taking intravenously three bags of heroin per day for eight months, although he said he had taken no heroin for the past 13 months. This is a surprising omission in view of the commission's attempts to bring reasonableness to bear in evaluating the controversial issue under discussion.

Let us see how the report described the education and the employment records of its subjects.

The mean age of the subjects studied was 23. Based on I.Q. testing, they were superior intellectually, although they had completed on the average, only two-and-a-half years of college. Their job histories were rather erratic, characteristic of a pattern of "itinerant living" [page 39]. Despite a relatively high level of scholastic attainment and superior intelligence, many of the subjects were performing well below their intellectual capability, usually working at menial, mechanical or artisan tasks [page 40].

The detailed data from the Boston study, presented at the meeting in San Juan, showed that although these students may have averaged two and a half years of college, of the 10 casual users four had had four years of college, and one of these was a graduate. One of the four worked as a carpenter's apprentice; he had had three jobs in the past three years. The 23-year-old graduate, who enjoyed an intelligence quotient (I.Q.) of 128, did office work and had had four jobs during the past four years. Another subject with four years of college (I.Q., 139) had had three jobs in the last three years; his usual work was "odd jobs." One heavy user, a 22-year-old college graduate (I.Q., 130) worked as an attendant in a parking lot and had had three jobs during the past three years.

Now that the work records of these users are presented, we can understand why the commission reported that "the social adjustment of the daily users, when judged from a traditional psychiatric standpoint, was impaired" (page 39). The discrepancy between functioning as adults and educational attainment only reinforces our contention that the use of marihuana does not lead to personal achievement.

The report is ambiguous: although it concedes that heavy use leads to serious changes, it continually restates the proposition that heavy users are only a small proportion of the total number of users. Since

its own statistics demonstrate that 500,000 people are heavy users, these users are then presented in the best possible light.

Generally, the heavy marihuana user's life style, activities, values and attitudes are unconventional and at variance with those of the larger society. These individuals are more pessimistic, insecure, irresponsible and non-conforming. They find routine especially distasteful. Their behavior and mood are restless and uneven.

Heavy users place particularly strong emphasis on impulsive response in the interest of pleasure-seeking, immediate gratification, and individual expression. They tend to evidence social and emotional immaturity, are especially indifferent to rules and conventions, and are often resistant to authority. However, several surveys have also revealed that they tend to be curious, socially perceptive, skillful and sensitive to the needs of others, and possess broadly based, although unconventional, interests [page 38].

Who does not have a friend or two of that type?

It is worth mentioning that during the course of the Boston free-access study one of the subjects suffered an episode which was described as a psychotic break by a psychiatrist involved with the study.<sup>1</sup> This episode was not mentioned in the report.<sup>10</sup>

The description of long-term effects in the heavy-use group is a good example of the understatement:

In the past few years, observers have noted various social, psychological and behavioral changes among high school and college age Americans including many who have used marihuana heavily for a number of years. . . . These individuals drop out and relinquish traditional adult roles and values . . . appear alienated from broadly accepted social and occupational activity and experience . . . reduced concern for personal hygiene and nutrition [page 62].

In other words, when a college student drops out of college, goes on public welfare, dresses in a slovenly manner, renounces responsibility, and occasionally does menial jobs in order to survive, the commission's response is to talk about alienation and adult roles and values. Why should a national commission countenance debilitation? To bridge the generation gap?



EVALUATION OF CHRONIC CANNABIS USE IN ENDEMIC  
AREAS OF CONSUMPTION

The report attempts to distinguish between the situation in this country and that in North African and Asian countries where the use of cannabis has been common for centuries. American society would be protected because the marihuana grown in this country is weak and its usage has not yet penetrated the mainstream of society. But for how long? The Appendix<sup>10a</sup> to the report (page 606) states that hashish seizures in the United States increased from 191 pounds in 1968 to 6,819 pounds in 1971.

In the section of the report summarizing a study on long-time users of ganja in Jamaica, performed on 30 smokers who had used this strong cannabis preparation daily for at least 10 years, the report states:

No significant physical or mental abnormalities could be attributed to marihuana use . . . Pulmonary function tests were impaired but this could not be attributed to marihuana alone since the subjects also smoked tobacco. These subjects did not show any evidence of deterioration of mental or social functioning which could be attributed solely to heavy long-term *Cannabis* use. They were alert and realistic, with average intelligence based on their education. Most functioned normally in their communities, with stable families, homes, jobs, and friends. They seemed to have survived heavy long-term *Cannabis* use without major physical or behavioral defects.

This sweeping conclusion is difficult to reconcile with one of the best documented results of the Jamaican study. The authors of this study, Rubin and Comitas,<sup>15</sup> report that, under the influence of ganja, the Jamaican farmers present a significant decrease in efficiency of work performance, as measured by videotape recordings and metabolic techniques: "Most smokers, immediately after drug use, enact more movements per minute, often with greater variation, and expend more kilocalories per unit of space cultivated."

These observations of Rubin and Comitas are in agreement with those of Soueif,<sup>18</sup> who reported in Egypt a significant fall in productivity of the workers under the influence of hashish.

In the summary of the section on chronic marihuana use, the report, however, concludes with statements which take into account other studies of chronic users, and its conclusions are more qualified:

"The heavy user shows strong psychological dependence on the drug. Organ injury, especially diminution of pulmonary function, is possible. Specific behavioral changes are detectable."

Such a conclusion might be indicative of the fact that the commission is unwilling at this time to state that chronic, heavy use of marihuana does not produce any physical or mental abnormalities, as the Jamaican study of 30 chronic users would imply. And, in the end, ambiguity prevails about the effects of chronic marihuana usage.

In order to maintain such an ambiguous stand on this subject, the commission had to ignore the results of the three-year study performed by the U. S. Army on heavy chronic American users of hashish in Germany.<sup>21</sup> Their study showed that "hashish abuse of [more than] 50 gm. per month for three to 12 months in 110 patients was associated with a chronic, intoxicated state characterized by apathy, dullness and lethargy with mild to severe impairment of judgement, concentration and memory." Severe hashish abuse and its simultaneous use with alcohol or other psychoactive drugs by large numbers of young American men is alarming." Dr. Seevers, who was the only pharmacologist on the commission, wrote in 1970 that "psychotoxicity of this type is the essence of chronic hashish and also of opium abuse." He went on to say that "to legalize marihuana would mean hashish."<sup>18</sup> It is difficult to reconcile his attitude of 1970 and his long career in psychopharmacology with a blanket endorsement of the commission's recommendations.

#### SAFETY OF OCCASIONAL USE: COMPARISON WITH ALCOHOL

In its conclusion the commission has taken into its spirit the insistent demand for legalization made by educated and articulate occasional users. These users point to their own usage as proof that the dangers are over-rated. The report concedes that "we suspect however that the moderate users share traits with both the intermittent and the heavy users" (page 38). Those 500,000 heavy users in the United States graduated from the intermittent group. There certainly must be some persons capable of using low-potency marihuana for a long time without suffering severe effects. In any individual case the problem is: how could one be sure at the outset that escalation would not develop?

Why should the educated, occasional user be penalized because certain people, especially those from deprived socioeconomic groups, are

not capable of handling this experience? Let no one forget that many of these 500,000 heavy users once were students. Kolansky and Moore recently published the effects of chronic use of marihuana on 13 adults.<sup>5</sup> The case histories they included should not be dismissed. For example: a 38-year-old, white, married English professor, after smoking only on weekends for about 18 months, increased the use of marihuana and hashish to a daily basis and continued to do so for more than four years. In addition to considering himself a visionary, he imagined that he was the reincarnation of Hamlet, and he conversed with his dead father during solitary walks around the campus at night. During the heaviest period of smoking, he was most seclusive and, in order to be alone, abandoned his wife and children for six months. One year after he had given up marihuana, he had difficulty in maintaining long periods of concentration and experienced an inability to convert his thoughts satisfactorily into written or spoken words.

To permit a selected group of "mature" persons to experiment with drugs is a dangerous experiment. Even if only a small percentage developed difficulties, how could a physician justify risking the mental function of any individual in the name of pleasure?

All the available literature indicates that daily smokers of cannabis present some symptoms of pulmonary impairment. The report, however, states that during the Boston free-availability study "Some abnormality of pulmonary function was demonstrated in many of the subjects which could not be correlated with quantity, frequency or duration of smoking marihuana and/or tobacco cigarettes. (One other investigation recently completed uncovered no abnormalities in lung or heart functioning of a group of non-cigarette smoking heavy marihuana users.)" (page 61.) And yet, Bernstein reported<sup>1</sup> that 14 of the 20 daily smokers did present significant impairment in pulmonary function.<sup>2, 10a</sup>

Further, Tennant testified before the national commission<sup>20</sup> on the findings which were observed in chronic users of hashish in the U.S. Army in Germany and were reported in the medical literature.<sup>4a</sup> These patients had smoked more than 50 gm. of hashish monthly for four to 24 months. They were studied because they had presented voluntarily and had a respiratory complaint that they related to the use of hashish. Twenty of these patients had chronic bronchitis. Nine of these 20 patients were subjected to bronchoscopy and bronchial biopsy. "Since

pathological changes of the bronchial epithelium occur rarely in soldier-age groups, it was considered that any pathologic changes would be significant and probably secondary to hashish abuse." Three pathologists reviewed the findings and agreed as to their significance.<sup>4</sup> The findings were as follows. Of the nine patients examined, all showed basal-cell hyperplasia, and inflammation and thickening of the basement membrane. Atypical cells were seen in eight and squamous metaplasia in six.<sup>4</sup> In his testimony, Tennant said that "Although the pathologic changes in all these biopsies represent significant pulmonary disease, the finding of squamous metaplasia in 6 of the 9 is the biggest cause for alarm. Even though possibly reversible, this is the lesion that is statistically and anatomically linked with squamous cell carcinoma of the lung."

#### TOLERANCE

Misunderstanding of the issue of tolerance is demonstrated in the following statement, which appears on page 52 of the report:

With regard to marihuana, present indications are that tolerance does develop to the behaviorally and physically disruptive effects, in both animals and man, especially at high frequent doses for prolonged time periods. Studies in foreign countries indicate that very heavy prolonged use of very large quantities of hashish leads to the development of tolerance to the mental effects, requiring an increase in intake to reach the original level of satisfaction. However, for the intermittent use pattern and even the moderate use pattern, little evidence exists to indicate the development of tolerance to the desired "high," although the high may persist for a shorter time period. During the Boston free-access study, no change was apparent in the level of the high produced by a relatively large dose of the drug over a 21-day period of moderate to heavy smoking.

And yet the psychiatrist<sup>13</sup> who interviewed these subjects reported that 14 of 20 found that the marihuana they smoked was losing its potency as the study progressed. Further, who has measured the "level of the high?" Is it measurable? It would be more scientific to measure the quantity of delta-9-tetrahydrocannabinol (THC) used. Using this criterion, tolerance was demonstrated in the Boston study, yet the report seems unwilling to acknowledge its development:

Under the study's confined conditions, participants tended to smoke more marihuana than they did "on the outside." The intermittent users, who by our definition averaged eight times a month under outside conditions, averaged three cigarettes a day during the study. The range was from one-half to six cigarettes daily.

The moderate and heavy users, who "on the outside" averaged 33 times a month, now averaged  $6\frac{1}{2}$  cigarettes a day. The range was  $3\frac{1}{2}$  to 8 cigarettes [pages 38-39].

The report,<sup>10</sup> then, blames the "study's confined conditions," for the fact that the smoking of marihuana increased markedly during the 21-day period of observation. The report<sup>10</sup> did not mention data from the Appendix (vol. 1)<sup>10a</sup> indicating that one subject smoked 20 cigarettes on the last day. Unmentioned in the report was the fact that each cigarette contained 20 mg. of THC, a very large dose. Therefore, one subject smoked as much as 400 mg. THC in one day. Yet there is no mention of tolerance to the drug. Indicative of this tolerance is that the consumption of marihuana during the last (21st) day of smoking reached a very high level (six cigarettes for the casual users, 13 for the "heavy users"). But these figures were not mentioned in the summary report<sup>10</sup> and "not included in the averaged data because smoking patterns during the last day of smoking were clearly atypical." In our opinion, this is not a good reason to exclude such pertinent data from the averaged data. In addition, 14 of 20 smokers declared, as the study progressed, that the material smoked was not as strong as it was during the first days.<sup>13</sup> The commission's confusion concerning tolerance is displayed on page 52, where the statement is made that, "by definition, the development of tolerance is neither beneficial nor detrimental." Tolerance is certainly fundamental, since it plays a role in leading the user to the next higher class of drug use. The dosage must be increased for the initial effect to be obtained repeatedly.

The fiction that tolerance does not exist for the "intermittent use pattern" is perpetuated again. The 500,000 heavy users stand in mute testimony to this conception. It is of interest that in India chronic users of ganja may smoke as much as 500 mg. THC (equivalent) per day,<sup>24</sup> a dose which would be strongly toxic to an occasional user and which is not far from the dose smoked in Boston.<sup>10a</sup>

### IS ALCOHOL THE STANDARD OF COMPARISON?

Another device that has been used to confuse the issue of marihuana use is to compare the problem of marihuana with that of alcohol. In *Hospital Tribune* for March 12, 1972, page 24, Governor Shafer, chairman of the commission, is quoted as saying that the "most abused drug in the United States is alcohol. It is our number one drug problem in the United States." How could things be otherwise? Alcohol is the most readily available drug! In the report the statement is made that:

Viewed against the background of the profound changes of recent years in the fields of economics, politics, religion, family life, housing patterns, civil rights, employment and recreation, the use of marihuana by the nation's youth must be seen as a relatively minor change in social patterns of conduct and as more of a consequence of than a contributor to these major changes [page 102].

Far from being a minor issue, if the casual use of marihuana were permitted in the United States, our country would be the only western country to have accepted large-scale use of an additional stupefying drug as part of its usual cultural pattern.

It is sophistry to compare the use of alcohol with that of marihuana. The commission is recommending that possession in public of 1 oz. or less of marihuana would not be an offense. Possession in public of more than 1 oz. of marihuana would be a criminal offense punishable by a fine of \$100. In a situation in which 24,000,000 Americans presumably have tried black-market marihuana at least once does anyone believe that the importation of hashish would not increase if laws of this type were passed?

The report goes on to say that "many young people perceive that marihuana is less dangerous than alcohol in terms of its addiction potential and long-term physical and psychological consequences. Many believe also that marihuana and other psychoactive drugs make it possible to expand their perceptions and see this as a perfectly legitimate objective" (p. 102). We have come to a sorry pass when those who would use drugs defend their use by saying that alcohol is worse. One of us even heard a heroin addict defend the use of drugs in general because "still more people use alcohol." The tragedy of alcoholism in the West need not be explained to an audience of physicians. Condon-

ing the use of drugs because "alcohol is worse" is a sad reflection on our powers of logic.

The report states that "for a certain number of young people, marihuana and the mystique of the experience eases this passage [into adulthood] by helping them share their feelings, doubts, inadequacies and aspirations with peers with whom they feel safe and comfortable" (page 98). This is a libel on young Americans. It is now alleged that these youngsters need marihuana for simple friendships! Are not those who would legalize marihuana for "private use" in the name of rationalizations of this type taking the risk of tampering with the physical and mental health of an entire society?

#### THE DISTINCTION BETWEEN MARIHUANA AND HASHISH

All throughout the report the same distinction is thus repeated: "The predominant pattern of use in the United States is experimental or intermittent use of less potent preparations of the drug. Even when hashish is used, the predominant pattern remains the same."

One would have thought that if the criminal law were to have some utility in distinguishing casual from heavy users and drug sellers from users, the fact that hashish contains much more THC than marihuana would be useful. Presumably someone found with small quantities of hashish in his possession would be worth investigating. This would be more or less proof that the hashish was imported from abroad since hashish is not indigenous to the United States. Nowhere in the report does the commission make a plea for hashish to become available. Rather, the point is reiterated that the United States is fortunate in that the marihuana in this country is low in potency.

Yet the report (page 166) makes the comment that "the Commission does not believe it is essential to distinguish by statute between less potent and more potent forms of the natural plant." Further on, the report emphasizes that "Society's resources should be committed to the task of reducing supply of the drug and persuading our citizens not to use it." Speed limits were imposed on drivers because it was shown that high speeds cause accidents. Are we ready to return to abolition of speed limits and rely on simple persuasion?

A great deal of confusion could have been avoided if the commission had elected to give a more scientific definition of marihuana instead of using loosely this undefined, deceptive word which breeds

ambiguity. Marihuana is not a single simple substance such as alcohol. Everyone is agreed that delta-9-THC is a toxic substance and that the amount of delta-9-THC contained in marihuana constitutes the only reliable index of its psychotoxicity and of its potential harmfulness. This amount, which may vary 500-fold (from 0.01 to 5%) according to plant preparations, can be readily measured and should become the criterion used by the legislator. It is obviously unfair to punish an individual for possession of what may amount to lawn grass or powdered rope. The substitution of delta-9-THC for marihuana in the present international and national legislation would help to dissipate the confusion created by those who have failed to distinguish between the fiber and drug types of the marihuana plant.

However, the commission elected not to take into consideration potency distinction because of "the prevailing American pattern of marihuana usage." The commission also stated that "analytical considerations, legal technicalities made it impractical to emphasize a scale of THC content in legislation" and claimed that, "whatever the potency of the drug used, individuals tend to use only the amount necessary to achieve the desired drug effect." As if this was not true for all the drugs used by man! And it is equally true that self-medication is bad medication.

No meaningful educational program concerning marihuana can be undertaken without discussing the fundamental cause of marihuana psychotoxicity, which is its delta-9-THC content. As long as a clear and meaningful definition of cannabis toxicity in terms of its delta-9-THC content is not given, any resulting essay on marihuana becomes a "signal of misunderstanding" or, to put it more simply, an exercise in ambiguity.

#### RECOMMENDATIONS OF THE COMMISSION AND OF THE SINGLE CONVENTION OF THE UNITED NATIONS

Removing all penalties (including a fine for simple possession for personal use) makes marihuana smoking more socially acceptable, since it suppresses the stigma attached to an unlawful act; fear of breaking the law is also a deterrent for a number of young people.

The commission claims that its recommendations eliminating penalties for possession are compatible with the obligation of the United States under the Single Convention of 1961 and will not contravene



any of the following articles:<sup>22</sup>

*Article 4*, which requires parties to limit exclusively to medical and scientific purposes the production, manufacture, export, import, distribution of, trade in, use and possession of drugs.

Indeed, this article, states the commission, does not include penal sanctions.

*Article 33*, which provides that the parties shall not permit the possession of drugs except under legal authority.

To comply with this article the commission advocates seizure and forfeiture of any amount found in public.

*Article 36*, which states that cultivation, production, manufacture, extraction, possession, offering for sale, distribution, purchase, sale, delivery on any terms whatsoever, brokerage dispatch, dispatch in transit, transport shall be punishable offenses when committed intentionally.

The commission claims that Article 36 does not refer to possession for *personal use* as a punishable offense, but as a link in illicit trafficking.

Many lawyers will disagree with the commission's interpretation of the Single Convention, which applies equally to *Cannabis sativa* (except the leaves), coca leaves, and opium derivatives. Because of this major departure from the intent of the Single Convention, it is possible that the International Court of Justice of the Hague might be asked to state its opinion. By eliminating penalties for possession for use the commission is indeed suggesting a new interpretation of the laws formulated for the international control of all stupefying drugs, including opiates.

It might seem premature, therefore, to sponsor legislation which could conflict with the international agreements of the United States. However, such legislation has already been introduced in both houses of Congress. In the Senate, the sponsors of the bill are the two senators who are members of the commission. This proposed legislation goes even beyond the commission's recommendations by eliminating its contraband proposition and making it legal to transfer and possess in public "reasonable amounts" (3 oz.). Such proposed legislation seems to be definitely in contradiction with Article 36 of the Single Convention.

The position of the commission, then, is clear. In none of the

developed Western European, Communist-bloc nations, or in Canada has cannabis become socially acceptable. In the last five years the attention of the world has been focused on the United States because of increasingly prominent social problems. In this context, is the United States ready to step out alone in the forefront of the developed countries in condoning widespread use of cannabis? Is this really a sign of social progress, as claimed by some? What fraction of those 500,000 heavy users of cannabis in the country are using hard drugs at the present time? Would it not be useful to have that information before we unilaterally change an international convention?

The international implications of the recommendations of the commission are so serious that they would justify the stand of the president in rejecting them.

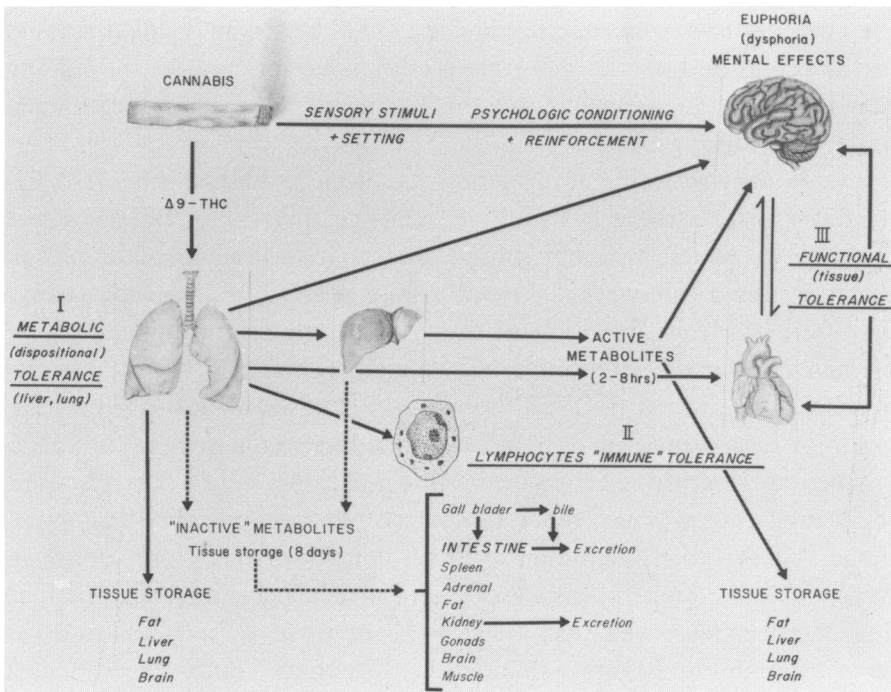
#### HOW TO DISCOURAGE THE YOUNG (10 TO 16 YEARS OLD) FROM USING MARIHUANA

Everyone is agreed that the use of drugs by adolescents is to be discouraged. Youth wants to know whether using marihuana is harmful or not. In response to this question, the report is ambiguous. Why should young people abstain from using marihuana when the report states that "the immediate effects of marihuana on the individual organs or bodily functions are of little importance. . . . By and large the immediate effects of marihuana intoxication have little or no permanent effect upon the individual" (page 85).

Why should one advise high school students not to smoke marihuana if, as noted in the report (page 99):

No conclusive evidence was found demonstrating that marihuana by itself is responsible for academic or vocational failure or "dropping down" (although it could be one of many contributing reasons). Many studies reported that the majority of young people who have used marihuana received average or above-average grades in school.

As we have previously noted, all these statements are qualified in the report by others indicating that heavy or very heavy use (not occurring in the United States) of marihuana may be harmful. However, the over-all impression of the reader of the report is that marihuana is a mild intoxicant and that its usage causes little risks to the individual. This was the interpretation given to this report by all the science



Schematic representation of the multiple effects of cannabis smoking. These effects are mediated by delta-9-THC and possibly by active metabolites, which are stored in tissues, mainly fat, for several days and slowly released. The inactive metabolites are slowly excreted, partly on account of their enterohepatic recycling. Note that tolerance to the effects of cannabis may be mediated by increased metabolism, by changes in target organs, and possibly by immune mechanisms. Adapted and reproduced by permission from Nahas, G. G.: *Marihuana—Deceptive Weed*. New York, Haven, 1973.

writers of the American and foreign press, through which the general public is informed. *U. S. News and World Report* of April 3, 1972, presented the findings of the commission under a typical headline: "Evils of marihuana, more fantasy than fact." Is this really the message the commission wanted to convey to the American people?

### HOW HARMLESS IS MARIHUANA?

The myth of marihuana, the killer weed, has been replaced by a new one: marihuana, the harmless mind-expanding herb.

The Committee on Public Health of the New York Academy of Medicine, which evaluated the report of the marihuana commission, accepted its conclusion that marihuana was a relatively innocuous substance and endorsed its recommendations. It even went one step further, recommending that the government explore the feasibility of

the licensing of marihuana sales in the United States. A detailed reading of the report and of its supporting studies does not support the finding that marihuana is harmless, and the commission does not recommend its legalization.

Additional scientific information has been published since the report was issued: there is definitive evidence that THC and its active metabolites, which are only soluble in fat, are stored in body tissues, including brain, for weeks or months, just as DDT is (see accompanying figure).<sup>6</sup> Habitual marihuana smokers present a significance decrease of their cellular mediated immunity, which is similar to that of patients in whom impairment of T-cell immunity is known to occur. This inhibition of blastogenesis may be related to a decrease in cells in the DNA synthetic period of the cell cycle.<sup>12</sup> Such a decrease in DNA synthesis of replicating cells was also reported by two other groups. The Leuchtenbergers<sup>8</sup> observed a diminution of DNA content in cells from tissue cultures of human lung explants exposed to marihuana smoke. Zimmerman and McClean observed that delta THC in three to nine microMolar concentration significantly inhibited the growth of *Tetrahymena*.<sup>25</sup> Such a mechanism would explain the mutagenic effects of cannabis<sup>9</sup> as well as the increase in chromosomal breakage reported in lymphocytes sampled from marihuana smokers.<sup>19</sup>

#### CONCLUSION

A thorough reappraisal of the findings of the national commission and an evaluation of the new scientific findings is urgently needed. In our opinion, such a reappraisal could best be performed by the National Academy of Science-National Research Council. Studies of the immunogenic and mutagenic effects of cannabis in areas of chronic cannabis intoxication where no other drugs are used should rapidly be undertaken.

The medical profession should not accept the recommendations of the marihuana commission without further analysis of the forgotten facts of the record. To do otherwise is to forego the age-old admonition of our mentor, Hippocrates: "Above all, do no harm."

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